Incentives to Increase Purchase and Generation of Renewable Energy

Concerned that deregulation of the utility industry would cause a decline in renewable energy generation, California enacted a law authorizing the collection of $540 million from investor-owned utilities to be used to support renewable energy technologies within California. These funds, collected between 1998 and 2002, are placed in the Renewable Resources Trust Fund, administered by the California Energy Commission, and are to be divided between four energy programs or accounts: existing renewables, new technologies, emerging technologies, and customer side. The funds are distributed as incentives or rebates for those who generate or purchase renewable energy or for those who install renewable systems. The overarching goal of the programs is to sustain renewable generation while developing a strong consumer market for renewable power.

Results:

Participation in the California Energy Commission's programs is still growing, particularly in the new and emerging technologies accounts. The annual emissions reductions presented here are estimated based on performance to date of the accounts. Some accounts have been in operation for less than one year; in these cases, the results were extrapolated to an annual figure. The customer side account is excluded from the results presented here due to the possibility of double counting between the customer side account and the existing technologies account (some customers receiving credits for purchasing renewable power may be purchasing it from facilities receiving credit for producing renewable power). In sum, the renewable energy programs provide financial incentives for over 10 million MWh of electricity each year. If conventional sources were used to generate this electricity instead of renewables, an additional 5.8 million metric tons of CO_2 (1.6 million MTCE*) would be emitted each year. In addition, the increased renewable energy reduces annual SO_2 emissions by 140 metric tons** and annual NO_x emissions by 1,727 metric tons** compared to conventional sources.

Renewable Energy Generated	Criteria Pollutant Emission Reductions	Emissions Savings
10.3 million MWh/yr	140 MT** SO_2 1,727 MT** NO_x	1.6 million MTCE*/yr

Principal Actors:

California's three major investor-owned utilities were authorized by the California Legislature to collect the funds associated with the California Renewables Program. The California Energy Commission was authorized to allocate and distribute those funds.

Additional Information:

California Energy Commission website, http://www.energy.ca.gov/renewables/renewables_fact_sheet.html; Marwan Masri, Renewable Energy Program Manager, California Energy Commission, Energy Call Center, 916-654-4531, mmasri@energy.state.ca.us.

This case study is based on Renewable Energy Program data provided by Suzanne Korosec, California Energy Commission. Estimates of emissions reductions were developed by EPA.

*Original data have been converted from kWh and kW capacity to Metric Tons of Carbon Equivalent (MTCE) using the following conversion factors: 1.240 lbs CO_2/kWh (The Cadmus Group, Inc., *Regional Electricity Emissions Factors Final Report,* The Cadmus Group, Inc., 1998, Exhibit 6). One metric ton is equivalent to 2205 pounds, one metric ton CO_2 is equivalent to 0.273 metric tons carbon equivalent (MTCE).

**SO_2 and NO_x emissions were calculated using the following emission factors: 0.03 lbs SO_2/MWh, 0.37 lbs NO_x/MWh (Emissions & Generation Integrated Database (E-GRID), EPA/Acid Rain Program).